IRCA ARTICLES
Behavior

Movement Difference: A Closer Look at the Possibilities

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Autism spectrum disorder (ASD) is a neurological disorder that impacts each individual differently, and sometimes dramatically. The impact may be observed in communication, challenging behaviors, and in an inability to control one's movements. For some individuals with autism spectrum disorder, participation at home at school, at work, or in the simplest activities of life, is hindered unless they are given accommodations, understanding and support.

When Martha Leary and David Hill (1996) began to research these types of challenges, they used the term "movement difference".

Movement difference is a difference, interference, or shift in efficient and effective use of movement. A disruption in the organization and regulation of perception, action, posture, language, speech and emotions.

They report that research has stated that individuals with autism spectrum disorder have movement differences or qualities that are similar to Parkinson's Disease, Tourettes Syndrome, and Catatonia.

Parkinson's Disease:

- Difficulty initiating or switching movements
- Freezing movements
- Stopping movements
- Slowness in movement

Tourette's Syndrome:

- Vocal tics
- Verbal tics
- Physical tics
- Obsessive-compulsive traits

Catatonia:

- Mute, Echolalic
- Repetitive movements
- Odd hand postures
- Automatic obedience
- Interruption/freezing of movements
- Stupor, frenzy, or excitement

These qualities and others relate to many of the characteristics, behaviors, or challenges some individuals with

autism spectrum disorder experience. When we hear or read about these qualities, we may nod in apparent understanding. However, when confronted with someone with autism, we may forget that these characteristics are the result of an internal central nervous system challenge and respond by telling the person to control him or herself. In fact, many of these movement differences are quite difficult to control. Consider an individual with Tourette's Syndrome who yells obscenities and cannot simply stop when asked, or an individual with Parkinson's Disease who cannot simply stand up and move without a great deal of physical and mental effort. When movement differences are implicit in the diagnosis, we offer accommodations, understanding, support and encouragement. This is not always true for individuals with autism spectrum disorder who may experience similar movement differences. Consider this example: the lack of movement or freezing in people with Parkinson's Disease is called akinesia, while the same phenomenon in autism is often called noncompliance!

Before we can more closely examine the challenges of movement difference, one must understand that our bodies are "dynamic systems" responding in a variety of environments. This means that our bodies are composed of many systems (e.g., vestibular, proprioceptive, nervous, visual auditory) that all work simultaneously to adjust and adapt based on the input from our immediate environment to our central nervous system. We automatically interpret incoming information, organize it, and then respond. Think of the readjustments and accommodations we have to make to cross a street, to stop one activity to do another, to look, to listen, to eat a meal, or to drive a car. There is a great deal of adjusting (e.g., starting, stopping, continuing, switching, executing, combining) that is needed. We can do all of these activities without too much of a challenge because our central nervous system works well and in an integrated manner. Another support may be the environment itself. Sometimes, the organization of an environment can give us information to help support our responses. For example, we may remember who someone is easier when we can recollect meeting them in a specific context or environment.

For individuals with autism spectrum disorders, their dynamic system is working, but it is working differently due to their central nervous system disorder. They may shift, change, and accommodate to their environmental needs, but may do it slower, faster, in unique ways, or only with outside support or accommodations. They may actually have to consciously think about every move or every sound they make, while keeping their minds focused. What seems simple and automatic to us, may be quite arduous for them. The key is they are responding, but just doing it differently. They may need additional support or accommodation to truly fit into specific environments due to their movement differences. Instead of being seen as willful, looking at the challenges differently will allow new possibilities to emerge. A better understanding of how hard it might be for someone with a central nervous system dysfunction to control their bodies without a great deal of thought, effort, and support may begin to emerge.

In Movement Difference and Diversity, Anne Donnellan and Martha Leary (1995) provide further insight into how movement differences can impact individuals with autism spectrum disorders. Their insights create questions regarding communication, body control and challenging behaviors, and provide new ways of looking at and understanding these issues. To examine movement difference more closely, Donnellan and Leary created a simple chart, that when discussed further, explains some of the impact of movement differences.

Movement Differences

Marked difficulties in:	***May Impede:***
Starting	Postures
Stopping	Actions

Executing	Speech
Continuing	Thoughts
Combining	Perceptions
Switching	Emotions
	Memories

These "difficulties/symptoms" can truly create situations that are both challenging and puzzling to the individual with an autism spectrum disorder as well as those who provide support. How each difficulty/symptom manifests itself can be unique for each individual and may impact more than one area. It is important to look more closely at each of the issues and consider the possibilities. It is interesting to note that we may even experience some of these challenges even though our central nervous system is intact! If we are challenged, imagine what it might be like for someone who has a central nervous system disorder!

The Symptoms/Difficulties

The following are ways that movement difference may manifest in individuals with an autism spectrum disorder. Individuals may experience one or more symptoms that can impact their lives greatly.

Starting or Initiating:

In any situation, we can be asked to start or initiate many actions, thoughts, memories or speech. Sometimes this may prove challenging. Have you ever needed extra time to recall information you "should" know easily such as a name or phone number? Is your memory a bit slower?

This may be considered an initiation difficulty. Initiation is one of the many challenges frequently discussed for those with autism. Consider the starting/initiation challenges that may occur during the day in a classroom, on the job, or at home. These individuals may have trouble moving place to place, or getting out of a seat, car or pool. They may have trouble answering a question when called upon because they may freeze or not be able to think and speak. Initiating a greeting, starting a conversation, and then being able to begin to leave the conversation once it is completed can be hard. Retrieving information on a topic during a conversation, a classroom discussion, or at a work site may take time. Responding with an "appropriate" emotion such as sadness at a funeral instead of "inappropriate" laughter may be a reflection of this difficulty. Remembering where a specific room is located, the name of an individual, where something is located, how to do an activity, when to go someplace in particular, or what they are to do are issues for many. The individual may not be able to begin the thought process needed for a specific activity on command; again freezing and seeming as if he or she is not responsive or knows what to do.

Stopping:

Sometimes, even for us, once we start something it is hard to stop. Have you ever done this? Have you arrived at work one day only to have that last song you heard stuck in your head all day, or thoughts of your upcoming vacation or illness of a loved one take hold of your mind? These difficulties may also be true for individuals who are experiencing movement differences. Some examples could include not being able to stop the impulse to stand up repeatedly, ask repetitive questions, sing or talk out loud, have sudden outbursts, constantly touch or rearrange

objects, wonder what will happen next, daydream about a pleasant or unpleasant memory or activity, shut out sensory input such as a scratchy tag in clothing, or even to engage in self injurious behaviors. All may be a result of the central nervous system's inability to regulate body responses.

Executing:

Executing has to do with rhythm, timing, speed, and accuracy. Think of dancing with a partner, and then suddenly stepping on your partner's toes! What happens to all the wonderful execution of the dance steps? It may vanish only to return after moments of puzzlement or may never quite come back. Much of our day involves accuracy, timing, or rhythm. Writing on the line, eating with a fork, moving down a hallway, taking turns in conversation, tying a shoelace, brushing teeth, combing hair, coloring, building blocks, inserting letters into envelopes, using a computer, riding a bike, playing ball, giving a class presentation or sharing all involve accuracy, timing, and rhythm. If execution skills are skewed, the resulting actions can be altered just enough to create noticeable differences.

Continuing:

Many adults experience the strange phenomena of talking about a particular subject only to have their thoughts mysteriously disappear suddenly for no reason. Being able to continue a thought or concept may be challenging at times. Continuing a specific movement, even as simple as walking down the hall, may be complicated. Continuing or maintaining a seated posture, being quiet, staying on task, remaining on a conversation topic, doing all the math problems, reading the entire chapter in a book, staying with a group, finishing a meal, or playing a game are all aspects which may prove challenging due to movement differences.

Combining:

Everyone experiences difficulties combining actions on some level regularly, whether it is watching and listening; listening and doing; listening, looking and talking; or any other combination of sensations that might occur. We are constantly receiving input via our sensory system, and are at times bombarded. Most of us are able to filter out those sensations that are not needed or might bother us such as a scratchy tag in our clothes or excess noises. Sometimes it is too much to have all of that input coming in at once and we have to shut something out. For example, when driving in heavy traffic on unfamiliar roads in a snow storm while looking for a particular address and listening to the radio, many have stated they turn the radio off. Why? Simply stated, there is too much "information" and there is the need to filter some out. Think of children in a classroom with the teacher talking, other students whispering, announcements blaring, temperatures too hot, and books, papers and items on the desks, posters on the walls, mobiles hanging from the ceiling, and being seated next to someone who is eating candy that smells wonderful! Consider all this input along with having to look at the board, listen, and then focus on the task and write while remembering all the directions! There is constant "combining" happening, which can become a monumental task!

Switching:

Transitions happen throughout the day; internally as well as externally. Transitions may be moving from place to place, from activity to activity, or from person to person. They may also involve a shift in thinking, action, perception, or even from one emotional state to another. Transitions are constantly happening, and there are constant internal shifts that are unconscious. For individuals with an autism spectrum disorder, those shifts may only be accomplished with a great deal of effort and conscious thought. Some individuals with an autism spectrum disorder have stated that their minds and bodies do not agree thus making life quite challenging.

The Differences

As written on the chart, these movement differences can lead to challenges in many aspects of our responses. Numerous difficulties have been illustrated in the examples given above. Because our body is a dynamic system which works in unison to adapt to each new environment, it is impossible to discuss challenges in isolation. Nothing works totally in isolation. For the majority of people, most responses are automatic and do not require direct thinking. For individuals with an autism spectrum disorder, these responses are not always automatic due to the dynamic system/movement differences. Instead of simply responding automatically, they may have to expend a great deal of energy to actually think directly about their posture, action, speech, thoughts, perceptions, emotions and memories in order to respond or interact in each environment in an "acceptable" fashion. Below is a discussion of various differences which may be experienced if there are movement differences.

Our **Postures** can be impacted. When we walk, we can maintain our typical upright posture. However, we can also change our stance when we walk with someone who is a toddler or even an elderly person. When seated, we can maintain our posture and not jump out of our seat at an inappropriate time, such as during a church service, a class lecture or a presentation. Our posture may also change when we are driving and the weather changes from dry to rain to sleet to snow and to ice. We can regulate how we position ourselves.

Actions may not change as readily for individuals who experience movement differences. Think of simply walking up steps to your home when they are completely dry, then when they are wet with rain, and finally slippery with ice. Without conscious thought we are able to regulate the speed, touch, and placement of our foot steps. Another example is how we can automatically decide how much force to use when lifting a heavy object and then lifting a baby. To lift a heavy object takes much effort. To lift a baby or touch someone requires little effort in comparison. Think about times you may have lifted a "glass" mug full of drink only to find out the mug is actually plastic and is much lighter than expected! Many times our actions are better when we are alone and practicing them, for example, line dancing in our kitchens. Then, when we get out in public or have to do a dance on command, our feet don't seem to remember what to do.

Some individuals have difficulty controlling the speed of their actions. Instead of being able to maintain a constant speed, they move faster and faster. This is called festination. Individuals who start walking may gradually increase the speed of their walk until they are actually running. Rather than running away, these individuals may be having difficulty regulating their movement. It is not a choice for them. Some other possibilities are people whose writing speed increases or speech quickens, or who have "racing thoughts". Perhaps these are not always under their control, but rather indicative of a movement difference resulting from the central nervous system dysfunction.

Speech is a complex motor function involving highly skilled movements. We are able to regulate the volume of our voices to accommodate speaking in a large room, a library, or face to face as well as when talking to someone across a classroom. This is not always true for individuals with an autism spectrum disorder who may speak out loud, yell, or make noises even when asked to be quiet. Another challenge is festination which is an increasing rate of speech, actions, or thoughts. This speeding up of processes can be disturbing and quite frustrating not only for the speaker, but for those attempting to listen and understand. "onfrontational naming" coined by Donnellan and Leary (1995) can also create difficulties. That is when someone is asked to label, describe, or simply speak on command. Most people may experience some freezing, slow memory recall, or inability to speak in those instances. Some of us may laugh it off. Others may become withdrawn, frustrated, or even get angry when confronted.

Our **Thoughts** can be impeded if we have trouble staying focused on one issue or topic. Many of us may be able to think of all that needs to be done during a day, and be concerned about a sick family member. We can work on the computer writing an article, and also be thinking about what we will eat for dinner. If we had any of the difficulties mentioned, we could have great difficulty maintaining our focus and getting our tasks done.

Perceptions constantly bombard us via our senses. There is constant noise, visual stimulation, smells, touch, balance issues, proprioception and taste that enters into our daily lives. How many times have we had to listen to a speaker or teacher in a noisy environment and be expected to filter out the unnecessary noise. I personally used to do my homework while the radio was on at the same time. Some say mothers of newborn babies can sleep through anything except their baby's cries. When we buy new clothes, they often have annoying tags that we must "tune out" while we are out in public so we do not make a scene yanking them out of our clothes. Finally, we are able to focus our attention to a detail within a large area, as in bird watching. We can find the small animal amidst the backdrop of many tree branches, leaves or grasses. This translates to finding the correct spot on a page, worksheet, or on the board.

Emotions may be hard to regulate, change, or control. Imagine walking out of a very sad movie and immediately meeting someone who is in a fantastically upbeat mood, silly and ready to party. As much as we might want to switch our emotional state, it might be difficult to simply stop one emotion and start another. Think of times when you are upset and crying. Someone tells you it will be okay and to stop crying. Was it easy to do? We may be extremely excited or happy about an upcoming vacation or visit from a friend, or be afraid of going to the dentist or a meeting and not be able to "shake it off" even if we rationally know things will be fine.

Strong emotions can also cause a movement difference to be more prominent. When someone experiences fright, frustration, or is startled they may not be able to respond as readily as they are able. If someone is angry, sad or jubilant, those emotions can also create barriers to rapidly accessing required actions, thoughts, perceptions or memories. If an individual with an autism spectrum disorder has movement differences, any extreme emotion can magnify that challenge and make it even more difficult.

Memories, which are a huge part of our daily lives, can also be greatly impeded in a number of ways. Because our central nervous system is intact, we may be able to balance thinking of past experiences along with the present situation and realize the difference. We can recall our way home, where the bathroom is, how to tie our shoe, how to eat our lunch, how to use the phone, where to write our name, who is sitting next to us, and on and on. However, we may experience some challenges in this area as we grow older. How many of us have gone into a room and forgotten why only to retrace our steps to help us remember why we entered the room in the first place? Imagine if our entire life was like that on a regular basis. Think of how frustrating that might be, and how we might react and feel.

Individuals with an autism spectrum disorder who experience movement differences may experience some of these challenges on a regular basis and may be labeled as having "challenging behaviors," lack of motivation or interest, or lack of intelligence. Without knowledge of movement differences, certain behaviors may seem challenging. However, if support staff are willing to begin to look at situations and behaviors with this new perspective, perhaps frustrations might be reduced, both for the support staff and for the individual with an autism spectrum disorder.

In order to imagine and experience some of the frustration movement differences might create, attempt brushing your teeth, writing or eating with the opposite hand; finding your keys in a different location; recalling a person out of context; driving an automatic after driving a clutch for a long time; or speaking with someone and not saying the letters "n" or "s." It can be quite challenging. We may have to think harder or move differently to be successful, BUT, we can be successful given support, encouragement, time and understanding.

If individuals with autism spectrum disorder are given the support, encouragement, time, and understanding they need, they too can be successful. Those of us who support individuals with an autism spectrum disorder should begin to realize that there is always much more to learn, know, and understand about movement differences and about autism. As Donnellan and Leary (1995) say at the conclusion of their book, we need to seriously consider "what we believe versus what we know about people." There are many unknowns surrounding autism, but we

continue to learn. Our job as people who support individuals with an autism spectrum disorder is to be open to new knowledge, incorporate that new knowledge into our frame of reference when possible, and be ever vigilant in creating the most supportive environment possible through our continual learning. That may mean letting go of what is "comfortable" and allowing ourselves to be "uncomfortable" with new insights that ultimately may allow us to do our job better. There is always more to learn. Nothing is ever absolutely black and white, because each individual is unique.

References:

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